

University of Wisconsin

CECCR II

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Outline

- Overview
- R-01s in CECCR II
 - Survivorship (colon cancer)
 - Prolonging life (lung cancer)
 - Effectiveness (breast cancer)
- Dissemination focus
- Theory and methods framework



CHES

- Interactive Cancer Communication System (ICCS)
 - Test novel information technologies
 - Provide information and support
 - Personalize communication to patients/caregivers



A Theoretical Framework

- Self-Determination Theory
- Experienced QOL depends on three basic psychological needs:
 - Autonomy
 - Competence
 - Relatedness



ICCS FOR PHYSICAL ACTIVITY ENHANCEMENT IN COLON CANCER SURVIVORS

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Study sites

University of Wisconsin-Madison (Gustafson)

University of North Carolina-Chapel Hill (Mayer)

MD Anderson Cancer Center (Demark-Wahnefried)




Background

- Colon Cancer Survivors
 - 3rd largest group of survivors
- Increases in activity
 - decrease recurrence rates
 - increase overall survival
- Transition from active treatment to extended survivorship



Combining 2 Evidence-based Interventions

- CHESS
 - FreshStart
- 
- mCHESS

Program of tailored print materials



**Compared to
standardized materials
for improving diet and
activity among newly
diagnosed prostate or
breast cancer survivors.**

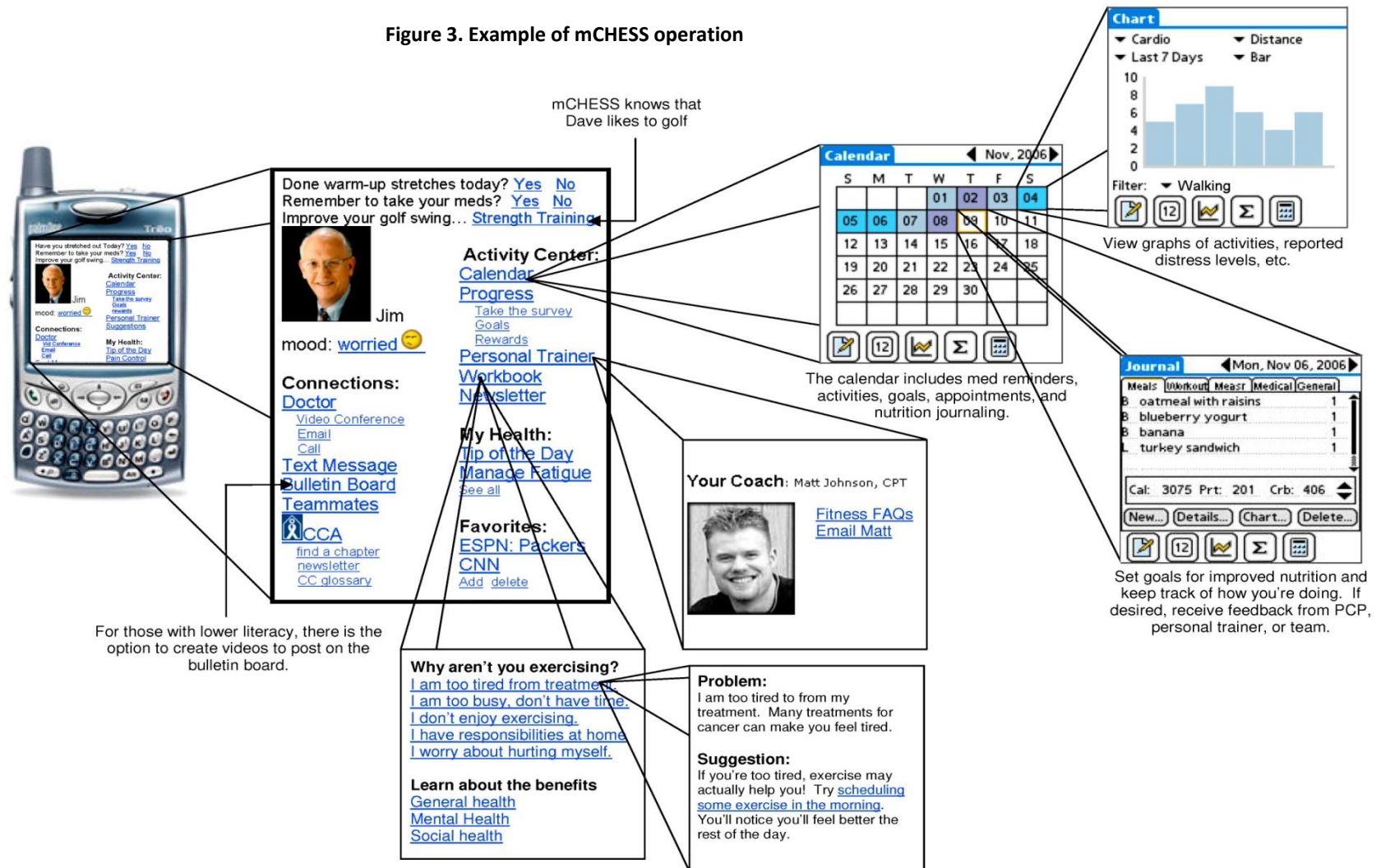
**Significant improvements
in diet, body weight, and
physical activity at 1-year
follow-up**



Study design

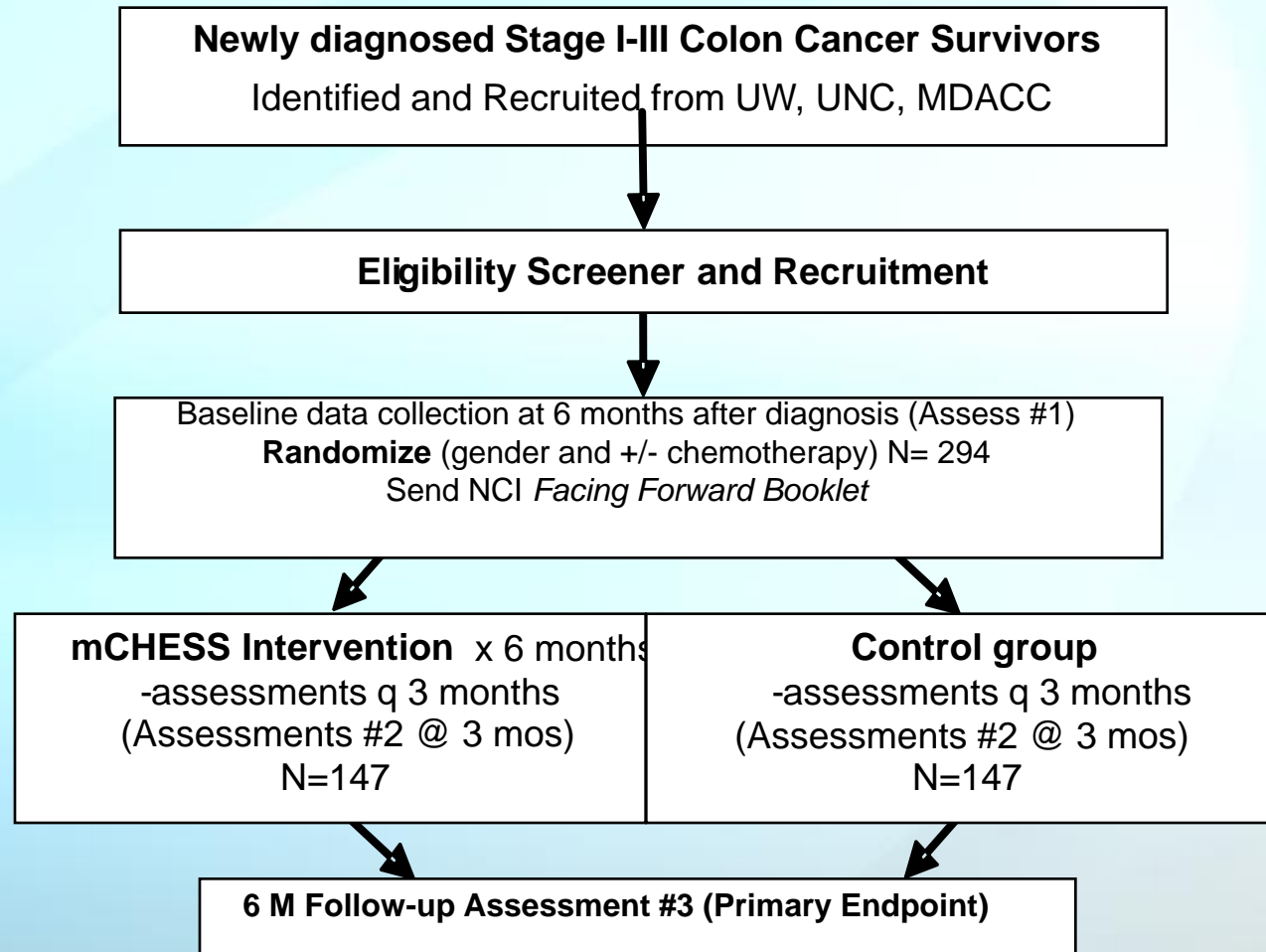
Phase I: Development

Figure 3. Example of mCHES operation



Study design

Phase II: RCT

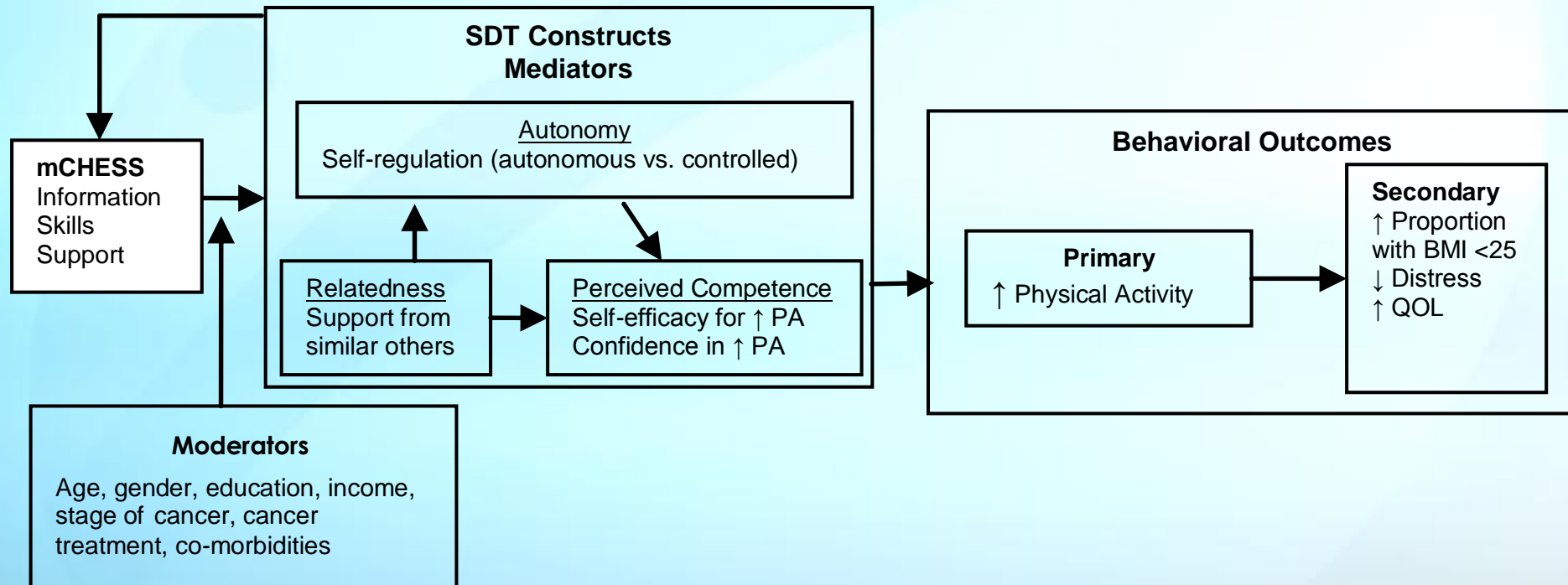


Aims

- ***Primary Aim:***
 - Determine impact of mCHESS on level of physical activity
- ***Secondary Aims:***
 - Determine impact of mCHESS on weight, levels of distress, health related quality of life
 - Analyze whether SDT constructs mediate mCHESS effects



Study outline and outcomes



ICCS IN LUNG CANCER: EVALUATING SURVIVAL BENEFITS

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Study sites

University of Wisconsin-Madison (Cleary/DuBenske)

MD Anderson Cancer Center (Carmack-Taylor)

Jesse Brown VA Medical Center (Apantaku)



Background

- CECCR I Clinician Integration Study
 - Studied CHES effects on caregivers
- Unanticipated survival benefit
 - CHES = 50%
 - Internet = 34.2%

p=0.038



Technology Enhancing Cancer Communications

Clinician Report

- Report summarizes patient QOL, symptoms, symptom distress, concerns
 - *On Demand*
 - *Threshold Alert*
 - *Clinic Visit Report*



Underserved

- JBVA Medical Center:
 - National Black Leadership Initiative on Cancer (NLBIC), an outreach initiative of the NCI
 - Translation of basic science in Cancer to the African American Community
 - Dr. Apantaku (NBLIC Midwest Regional Director)



Study design

- Recruitment
 - 376 advanced stage lung cancer patients
 - optional caregiver participation
- Longitudinal, randomized controlled trial:
 - Internet Control
 - Lung Cancer CHES with Clinician Report
- Bi-monthly surveys across 1 year follow-up



Aims

- ***Primary Aim:***
 - Determine the impact of lung cancer CHES on Survival and QOL
- ***Secondary Aims:***
 - Determine whether SDT constructs mediate CHES effects



Effectiveness

CECCR II

UW-CECCR

Kaiser Permanente NorthWest

***Tim Baker, Jack Hollis, David Feeny, Robert Hawkins,
Suzy Pingree, Elizabeth Burnside, Helene McDowell***



Context

- Most experimental data on CHESS (& ICCSs) are efficacy data
 - Motivated patients
 - Clinician supported recruitment
 - In-person recruitment
 - Provision of computer/internet
 - Payment
 - Training
- How will CHESS/an optimal ICCS, work in the “real world”
 - To build a case for dissemination



Context (cont.)

- Also, data supportive of ICCSs are narrow: do not address
 - Clinician encounter
 - Health care utilization
 - Cost-effectiveness



Aims

- What are the effects of CHES if made available in a healthcare setting via quasi-normal access routes ?
 - Used?
 - Information competence ?
 - Affect?
 - QOL?
 - Health care utilization?
 - Clinician encounter/appraisal?



Study Features

– Recruitment

- Participants: 600 women KPNW Pts with newly diagnosed breast cancer
 - Intrinsic computer access/resources
- Diagnosis detected via EMR
- Radiologist provides website information
- Pt. receives letter re: website
- Literature at Surgeon Visit
- On-line sign-up and consent
 - Web Training = Phone & on-line



Design

- Random assignment to
 - Usual Care Website +
 - KP materials available on website
 - Additional informative readings
 - CHESS
 - Usual suspects:
 - Information
 - support
 - skill building services



Questionnaire Assessments (on line)

- Information Competence
- Negative Affect
- Perceived Health Competence
- Preference based QOL (HUI)
- FACT-B
 - Breast CA Concerns
 - Emotional Well Being
- Perceived Support
- ICCS Satisfaction
- Satisfaction with Clinician and Health Care
- At Baseline, 2, 4, & 8 mo



Other Assessments

- Information Processing probes while using CHES
– Depth of processing/elaboration
- Physician ratings of clinical encounters
– Surgery & oncology
– Satisfaction with visit, pt. preparation, etc.
- Website Use
 - Usual Care website
 - CHES (& individual services)



Other Assessments (cont.)

- Health Care Utilization (via EMR)
 - Encounters with specialists
 - Including phone calls
 - All providers
 - Adherence (medication, tests, appointments)
 - Urgent/Emergency Care



Predictions

- CHES will
 - Be heavily used by Pts.
 - Increase information competence, satisfaction with health care
 - Decrease negative affect
 - These effects will mediate gains in QOL
 - CHES will reduce Specialist Utilization and Improve Clinician ratings of visit quality
 - CHES will have a favorable QALY-gained profile relative to other health interventions
 - CE computed from Pt., health plan & societal perspective



Ultimate Outcomes

- To build a stronger case for dissemination
 - a business case for insurer/health plan
 - a clinical case for clinicians, payers, health plan
 - a practice case for clinicians



Next Steps

- True Dissemination
 - No pre-consent
 - No random assignment/universal access
 - Deliver ICCS as a standard clinical service
 - assess use, impact, and appraisals



Theory and Method Core



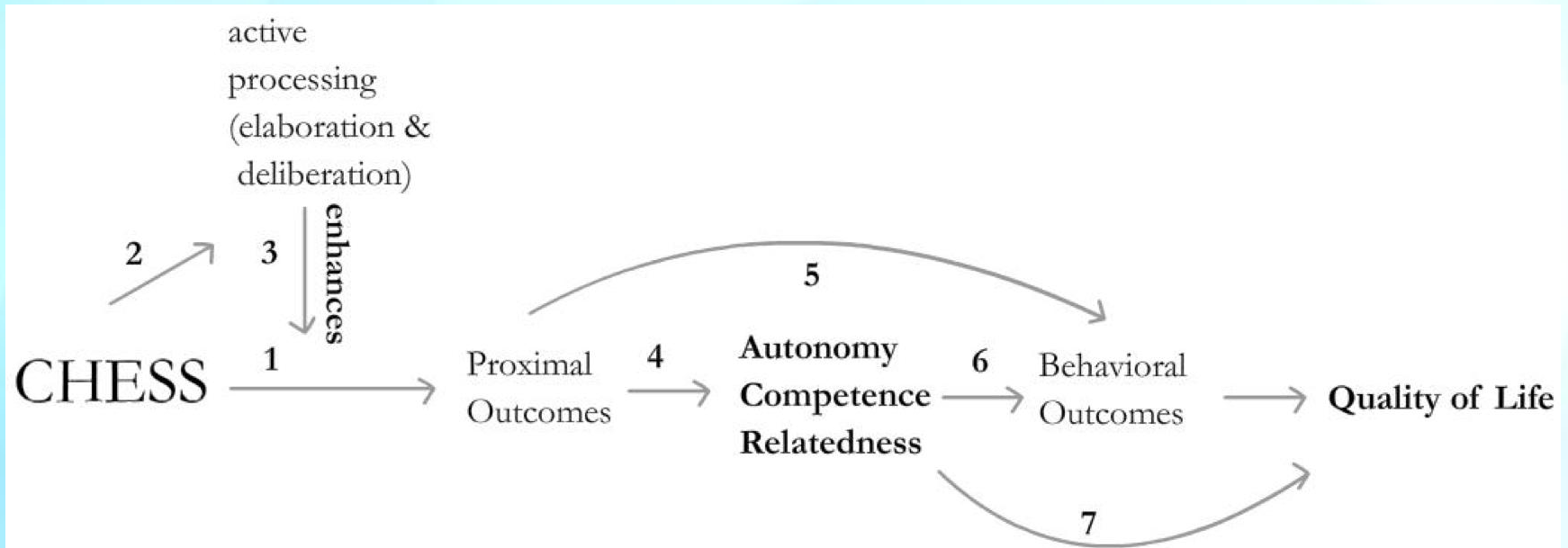
Technology Enhancing Cancer Communications

Psychological Basis of CHESSE Effects

- We know participation in CHESSE affects learning (knowledge) and opinions (attitudes), including QOL
- However, the mental processes underlying such effects require further specification
 - Work on tailored health messages and online conversation suggests that active processing mediates effects
- We are concerned with two forms of processing
 - elaboration (relating new info to existing knowledge)
 - deliberation (considering all sides before acting)



Model of How eHealth Systems Affect QOL



1. CHESS promotes proximal outcomes – e.g., knowledge, skills, connections
- 2/3. Active processing of CHESS substantially enhances these effects
- 4/5. Proximal outcomes shape behavioral outcomes, directly and indirectly.
- 6/7. SDT components affect behavioral outcomes – i.e. adherence, self-management, and use of health resources – and quality of life



Need to Unpack CHESS Interactions

- Logfile-level data on details of CHESS use
 - Examine patterns of reading, composing, interacting.
 - Need to develop measures of elaboration and deliberation
- Computer-assisted coding of discussion posts
 - Must deal with the complexity of language use
- Distinguish message reception from expression
 - Separate effects of composition from responses produced
 - Part of a movement to look beyond reception effects



Language in Context

- Major limitation of computer coding is dependence on electronic word counts
 - Prone to errors of context, issues of negation, qualifications of meaning, sarcasm and metaphor
 - Need system that can deal with syntactical complexities of language when coding
 - Such systems obviously require more work on the part of human coders to create programming rules



Infotrend as a Coding System

- Allows analyst to use programming language to create (a) idea categories, (b) words that tap those idea categories, and (c) rules that allow pairs of ideas to be combined for more complex meaning.
- This approach is computer-aided — that is, the ideas, idea categories, and rules are created and refined iteratively by human coders.
- These steps, undertaken distinctly in each study, lead to greater and greater precision in the computer's application of the content analysis.
 - Much higher than dictionary based programs



Merging with Log File Data

- To address issue of expression versus reception effects, need to integrate content codes with “click-level” information from the database
- This approach allows analysts to distinguish the content of what was written from the content of what was read by combining content and page view data
 - Also deals with the issue of lurkers, who read but don’t write
- By integrating message coding with action log data we not only know who wrote every query, message, and post but also who read it and responded to it.



Questions



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